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basic imagery interpretation report

Developments at Soviet Solid-Propellant Production Facilities (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES
BE: VARIOUS
USSR



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WNINTEL

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Developments at Soviet Solid-Propellant Production Facilities					UR
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	See below	See below	See below	See below	See below
MAP REFERENCE					
ACIC. USATC, Series 200, Sheets 0156-11, 0161-2 and -21, 0234-22 and -24, scale 1:200,000					
LATEST IMAGERY USED			NEGATION DATE (If required)		
See Abstract			NA		

Installation	Geographic Coordinates	Category	BE No	COMIREX No	NIETB (MRN) No
Biysk Solid Motor Production Plant I	52-29-05N 085-07-10E				
Biysk Solid Motor Production Plant II	52-28-48N 085-02-32E				
Biysk Solid Motor Test Area I	52-30-47N 085-04-55E				
Biysk Solid Motor Test Area II	52-31-19N 085-01-54E				
Kamensk-Shakhtinskiy Solid Motor Production Plant	48-17-54N 040-10-46E				
Kemerovo Solid Motor Production Plant	55-24-58N 085-58-32E				
Pavlograd Solid Motor Production Plant	48-34-01N 035-49-12E				
Pavlograd Solid Motor Assembly and Test Support Facility	48-27-10N 035-57-17E				
Pavlograd Solid Motor Test Facility	48-26-10N 035-58-20E				
Pavlograd Ordnance Research and Development Facility	48-29-26N 035-56-56E				
Perm Solid Motor Production Plant	57-59-18E 055-53-30E				

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ABSTRACT

1. (S/WN) Recent developments at 11 Soviet facilities involved in the production, assembly, and testing of solid-propellant rocket motors are presented in this report updating NPIC report [REDACTED]. All relevant satellite imagery acquired through [REDACTED] the information cutoff date, has been used in this report. A location map, 19 annotated photographs, and six tables are included.

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2. (S/WN) Developments at the facilities since the previous report included accidents in the production lines at Biysk Solid Motor Production Plant I and Kemerovo Solid Motor Production Plant and modifications to a vertical test position at Pavlograd Solid Motor Test Facility. Also during this reporting period, a segmented probable diffuser was identified. Test activity was observed at all of the test facilities except the type A test cell at Kamensk-Shakhtinskiy. This cell has been inactive since 1969.

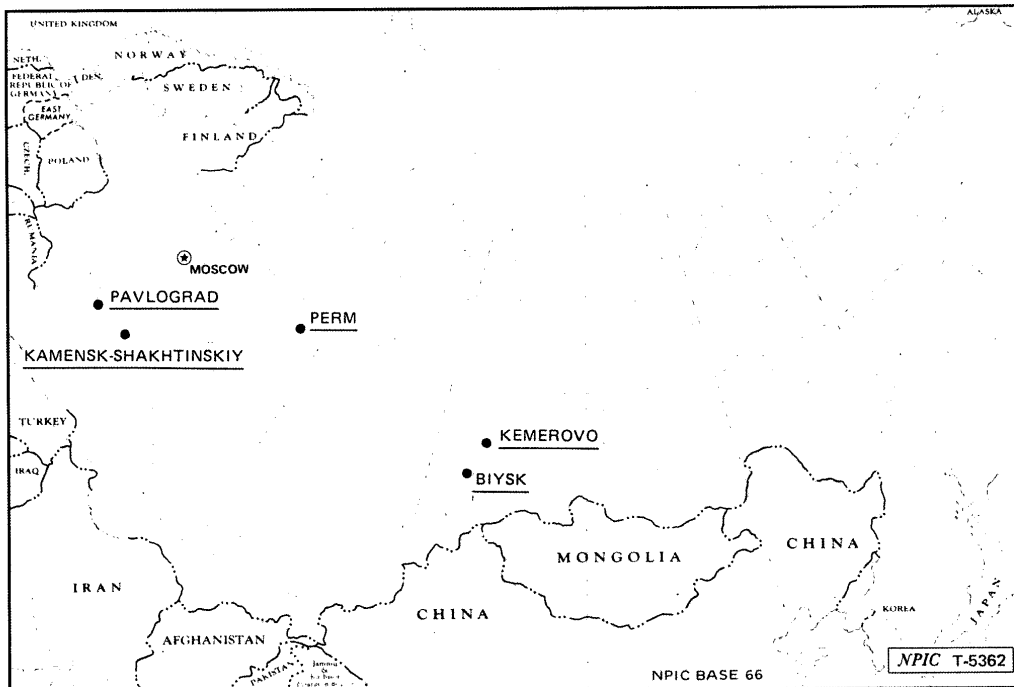
3. (S/WN) Major construction programs continued at Biysk, Kamensk-Shakhtinskiy, Pavlograd, and Perm. The expansion of facilities in the Pavlograd Solid Motor Complex is probably related to the production and assembly of a new medium-solid ICBM.

INTRODUCTION

4. (S/WN) Each of the facilities discussed in this report is involved in the production, assembly, or testing of solid-propellant rocket motors and related components for strategic or tactical delivery systems. Destroyed buildings in the production lines at the facilities have indicated that the Soviets are continuing to experience problems in developing safe and reliable production processes. These problems, however, have not had any apparent impact on their use of solid propellants in many of their new missile systems.

5. (S/WN) This report discusses developments that have occurred at these facilities since the previous NPIC report.¹ The locations of these facilities are shown in Figure 1. Included in this report are a location map, 19 annotated photographs, and six tables.

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SECRET**FIGURE 1. LOCATIONS OF SOLID PROPELLANT PRODUCTION FACILITIES, USSR****BASIC DESCRIPTION****Biysk Solid Motor Production Complex****Solid Motor Production Plant I**

6. (S/WN) Between [] an explosion in the western part of the composite-modified, double-base (CMDDB) plant destroyed one motor production building and a railshed and damaged a second motor production building (Figure 2). By [] external repairs to the damaged building appeared to be complete; by [] a new motor production building—replacing the destroyed one—was externally complete. The railshed was rebuilt in May 1982.

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7. (S/WN) In June 1974, an explosion with very similar results as those described above occurred in these same buildings, and by August 1974, reconstruction had been completed.

8. (S/WN) The two explosions indicated that an extremely hazardous process such as the mixing of high-energy propellants had occurred in the building that was destroyed. The rapid reconstruction of the buildings following both explosions indicated that these buildings were involved in a high-priority program.

9. (S/WN) The large fabrication building, under construction in the probable explosives storage and handling facility, was nearly complete. Minor construction programs were underway in several areas of plant I (Figure 3).

Solid Motor Production Plant II

10. (S/WN) On [] at plant II (Figure 4), a specially configured heavy-load rail transporter—[] long and [] wide, with two shallow cradles mounted near the center of the car (Figure 5)—was near the south entrance to a new-style casting/curing building in line 2. This transporter probably carried large rocket motors or motor segments horizontally and may have been equipped to lift the motors/motor segments out of the casting pit. Additional rail traffic at line 2 was observed infrequently between the three casting/curing buildings and the bay charger rails.

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11. (S/WN) On [] five propellant mixers were on a loading dock at the east end of line 2. Between [] one of the mixers was moved to the entrance of a mix building probably for installation. The installation of new mixers may indicate new motor production.

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12. (S/WN) Between [] three railcars appeared to be parked in a line near the entrance to the possible casting building in line 3, which is probably associated with the production of SS-NX-20 motors.¹ The removal of the railcars and the subsequent rail-and-road traffic at line 3 indicated that production or preparation for production was underway.

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13. (S/WN) Construction at plant II was minimal during this reporting period. A probable transshipment building in the rocket motor finishing, assembly, and transshipment area was in mid-to-late stages of construction; an addition to a small possible curing building in line 3 was constructed; dummy POL tanks between lines 1 and 2 were constructed; and trenches were observed near the west end of line 2 during 1981.

Solid Motor Test Area I

14. (S/WN) Test activity was observed in motor test area I (Figure 6) at two horizontal test cells during this reporting period. Between [] a test occurred at the type A horizontal test cell. A small, dark-toned blast mark indicated that a small rocket motor had been tested. Earlier, on [] discoloration of the snow on the blast apron at the type A test cell suggested that a test may have occurred. On [] snow clearing on the blast apron at the type B test cell indicated that test activity may also have been underway at this cell.

15. (S/WN) A [] probable motor shipping crate, observed in test areas I and II in the past, was seen near the checkout building several times during this reporting period. When the crate has been observed in test area II, tests or test preparations have usually been underway.

16. (S/WN) A probable expended motor, [] was on a railcar at the entrance to test area I on [] a suspect conical motor—[] long with a [] nozzle and tapered from []—was on a railcar near the temperature conditioning buildings.

17. (S/WN) The movement and number of railcars at test area I were high during this reporting period. Cradle cars, [] missile-associated railcars, boxcars, and flatbed railcars with [] meter crates—all seen previously—were also observed during this reporting period. The amount of railcar activity at test area I indicated high levels of test activity for both test areas at the Biysk complex. Test area I activity is presented in Table 1.

18. (S/WN) A new firing-in butt and firing area were constructed in the small-arms test area, and modifications to the old firing-in butt were made there. A new small-arms test range, possibly associated with test area I, was approximately 2.5 kilometers west of the test area.

Solid Motor Test Area II

19. (S/WN) Activity at test area II was high. A large motor was tested on [] A dark-toned blast mark, approximately [] extended from the thrust block on [] (Figure 7). Probable blast marks had also been observed in this area on [] and []. Indications of possible tests were also observed on [].

20. (S/WN) A [] motor—observed in the open storage area and inside the test position on several occasions—was probably tested during this period, although no blast marks were associated with the motor. An additional [] motor segment was in the open storage area on [] indicating that work has been continuing on segmented motors. These motor segments were first observed at test area II in 1978.²

21. (S/WN) Crates, handling rings, and other test-related equipment inside the test position and in the test area are listed in Table 2. The [] crate on a transporter, observed during seven reporting periods [] in test area II. A probable test apparatus on a transporter was parked inside the test area east of the test position from [] through at least []. The apparatus—previously identified as a [] diameter motor?—did not appear to have been used in tests during this period but was seen in 1979 inside the test position and, on one occasion, against the thrust block. The apparatus has also been observed at Biysk Test Area I. An open probable test article/apparatus container—approximately [] long by [] in diameter—was seen inside the test position three times in late 1981. Its dimensions and configuration are similar to those of the probable test apparatus on a transporter, but the relationship between the two objects, if any, is not known.

22. (S/WN) The multistory probable control building, approximately [] east of the test position, had been externally completed by the end of []. Stacks of materials just outside the building suggest that this structure was being internally equipped. Four small buildings have been constructed on the eastern side of the building. Earth backfilling against the northeast side of this structure was not complete as of [].

Kamensk-Shakhtinskiy Solid Motor Production Plant

23. (S/WN) Construction in the newly expanded area of the plant continued slowly (Figure 8). In January 1982, a nine-bay curing building was externally complete in this area. Rail lines extending from the plant served the new building, and a fenceline separately secured this structure from the remainder of the expanded area. A security fence around the entire area was nearly complete, but no additional construction was started.

24. (S/WN) The recently completed solid motor production line described in a previous NPIC report³ probably became operational during this period. A possible laboratory building—probably associated with the new production line—was in the original plant area near the new line where several small support buildings had been. This building was in late stages of construction on [].

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Table 1.
Probable Motors/Motor Containers and Test Apparatus at Biysk Solid Motor Test Area I

This table in its entirety is classified SECRET//WNINTEL

Date	Dimensions (m)		Description
	L	Diam	
			Prob test apparatus on transporter near motor checkout bldg
			Poss conical motor near temperature conditioning bldgs: appeared to have [] nozzle; sides of poss motor appeared slightly bowed
			Prob expended motor on rail line at entrance to test area

25. (S//WN) Five curing bays at two of the existing curing buildings at the original plant were completed during this period. These new bays as well as the new nine-bay curing building significantly increased curing capacity at the plant. Additional construction included a shed-roofed cover over the entrance to one of the curing buildings, an addition to a subassembly building, and footings near the southernmost non-destructive test building. The L-shaped barricade around the non-destructive test building was leveled by March 1982, and the rail line to the building was disrupted as a result of the construction.

26. (S//WN) Motors and/or motor containers observed during the period are listed in Table 3. Two propellant mixers were on a rail line between the mixing and casting areas on []. A significant number of POL tank cars were frequently observed in several areas of the plant, particularly in the curing area. These tank cars have been observed in the curing area during the past several years. It is not known why they are in this area of a production plant, but they may not be transporting POL.

Kemerovo Solid Motor Production Plant

27. (S//WN) In June 1981, an explosion destroyed a casting building at the composite propellant production plant (Figure 9). Reconstruction of the destroyed building did not begin until late October 1981 and was still underway in May 1982. The slow reconstruction of this building suggests that the facility was involved in a low-priority program. Destroyed buildings at other Soviet propellant production facilities involved in high-priority programs have been rebuilt almost immediately (see Biysk Solid Motor Production Complex).

28. (S//WN) Evidence of rocket motor testing was observed at the horizontal test position (HTP) on three occasions during this reporting period. Bilateral blast marks observed on the apron at the HTP in July 1981 and May 1982 indicated that probable thrust reversal tests had taken place. Evidence of thrust reversal testing at this position was initially detected in September 1980. A solid motor test firing took place in the type C horizontal test cell in March 1982 (Figure 10). The test, leaving a light-toned stain on the apron, only partially melted the snow on the blast deflector, suggesting that either a small test article had been tested or that the test had been short. Little construction was observed at the composite plant. A mix building was renovated in spring 1981, and a probable personnel bunker had been completed near the main entrance by October 1981. Construction that began in 1975 on the eastern portion of the new TNT plant was completed during this reporting period; this portion was probably operating by July 1981. Construction on the rest of the plant, including five barricaded production buildings, has been at a standstill since July 1981, suggesting that a portion of the program has been postponed or abandoned. Test-related activity at Kemerovo is provided in Table 4.

Pavlograd Solid Motor Production Complex

29. (S//WN) Expansion programs in the four areas of the Pavlograd complex were nearly complete during the reporting period, and portions of the new facilities appeared to be operational. These new facilities will probably support production related to a new medium-solid ICBM² expected to begin flight testing at Plesetsk Missile Space Test Center [] in the near future.

Solid Motor Production Plant

30. (S//WN) The new rocket-motor production line (Figure 11) at the Solid Motor Production Plant (SMPP) was approximately 70 percent complete as of []. A portion of the new line containing a propellant mix building and two casting/curing buildings was separately secured and appeared to be operational. This portion of the facility may be functioning as a pilot production line producing initial test articles.

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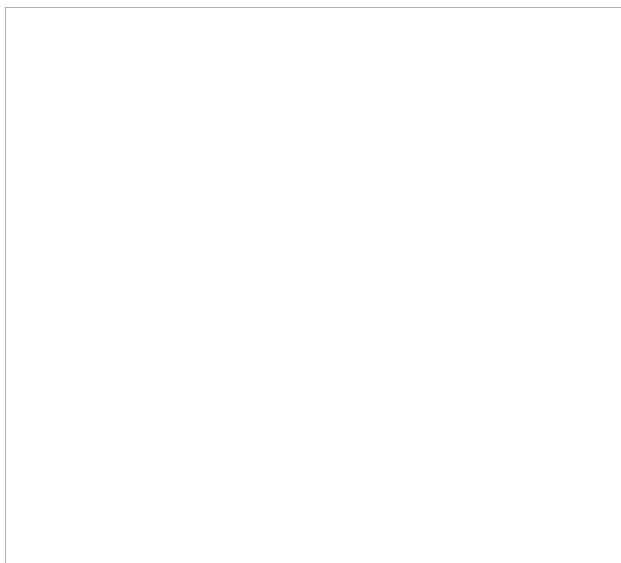


Table 2.
Activity at Biysk Solid Motor Test Area II
This table in its entirety is classified SECRET//WNINTEL

Date	Description	Remarks
	Test activity	Environmental shelter at test block; large crane inside test position
	No test activity	Environmental shelter and large crane away from thrust block
	Test activity	[redacted] small environmental shelter at thrust block [redacted] 10-m crate on transporter east of test position; large crane at thrust block; [redacted] crate inside test position
	No test activity	Environmental shelter away from thrust block
	Test activity	[redacted] large crane and small environmental shelter at thrust block [redacted] environmental shelter east of test position; large crane and small environmental shelter away from thrust block; object at thrust block; test apparatus on transporter east of test position
	No test activity	[redacted] environmental shelter east of test position; large crane inside test position [redacted] environmental shelter and large crane away from thrust block
	Test activity	10-m crate on transporter east of test position light-toned streaks on blast apron [redacted] environmental shelter at thrust block small environmental shelter at thrust block possible blast mark

Table 2. (cont'd)

Date	Description	Remarks
	No test activity	Environmental shelter and large crane away from thrust block
	Test activity	[redacted] small environmental shelter at thrust block [redacted] prob test apparatus/cradles emplaced near thrust block [redacted] environmental shelter at thrust block test article/apparatus at thrust block; probable light- toned blast mark
	No test activity	Environmental shelter away from thrust block
	Test activity	[redacted] poss light-toned blast mark [redacted] prob test article/apparatus in front of environmental shelter at thrust block; [redacted] motor case inside test position [redacted] environmental shelter at thrust block; open prob test article/apparatus container inside test position
	No test activity	Large crane and environmental shelter away from thrust block
	No test activity	[redacted] environmental shelter at thrust block open; prob test article/apparatus container inside test position [redacted] same as [redacted] except 10-m crate on transporter east of test position [redacted] poss test indicated by discoloration of barricade above thrust block (complete coverage not available)
	Test activity	[redacted] darkened area on blast apron [redacted] environmental shelter at thrust block [redacted] small environmental shelter and vehicle
	No test activity	Environmental shelter and large crane away from thrust block
	Test activity	[redacted] small environmental shelter at west side of thrust block; approx [redacted] crate inside test position [redacted] environmental shelter at thrust block; small environmental shelter at west side of thrust block [redacted] dark-toned blast mark [redacted] environmental shelter at thrust block; 10-m crate on transporter east of test position [redacted] large crane near prob test apparatus at thrust block
	No test activity	Large crane and environmental shelter away from thrust block
	Prob test activity	Small environmental shelter at thrust block; vehicle/object near small environmental shelter
	No test activity	Large crane and environmental shelter away from thrust block
	Test activity	Environmental shelter at thrust block; poss object near environ- mental shelter
	No test activity	Large crane and environmental shelter away from thrust block
	Test activity	Environmental shelter at thrust block; small environmental shelter at west side of thrust block [redacted] slanted-roofed crate inside test position aligned with thrust block [redacted] 10-m crate on transporter east of test position
	No test activity	Environmental shelter and large crane away from thrust block
	Test activity	[redacted] environmental shelter at thrust block; vehicle/object near environmental shelter; 10-m crate on transporter east of test position [redacted] prob light-toned blast mark
	No test activity	Large crane and environmental shelter away from thrust block
	Test activity	[redacted] environmental shelter at thrust block [redacted] 10-m crate on transporter east of test position prob test apparatus aligned with thrust block

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Table 2A.
Test-Related Equipment at Biysk Solid Motor Test Area II

This table in its entirety is classified SECRET/WNINTEL

Date	Description	Location	
	10-m crate on	East of test position	25X1
	<input type="text"/> crate	Inside test position	25X1
	Diams of handling rings:	Open storage area	
	outer inner		
	<input type="text"/> <input type="text"/>		25X1
	Prob test apparatus on transporter	East of test position	
	<input type="text"/> motor	Open storage area near thrust block	25X1
	prob test article/ apparatus container		
	<input type="text"/> motor	Open storage area	25X1
	<input type="text"/> motor	(moved since <input type="text"/>)	25X1
	segment	Open storage area	
	Diams of handling ring:		
	outer inner	Inside test position	
	<input type="text"/> <input type="text"/>		25X1
	<input type="text"/> motor	Open storage area	25X1
	Diams of handling ring:	Near and aligned with thrust block	
	outer inner		
	<input type="text"/> <input type="text"/>		25X1
	10-m crate on transporter	East of test position	
	Prob test cradles	Near thrust block	
	Prob test equipment	At thrust block	
	Poss motor (dimensions could not be determined):	Near thrust block	
	Diams of handling rings:	Inside test position	
	outer		
	<input type="text"/>		25X1
	<input type="text"/> motor	Inside test position	25X1
	Prob test article	Inside test position	
	10-m crate on transporter	East of test position	
	<input type="text"/> crate	Inside test position	25X1
	10-m crate on transporter	East of test position	
	Prob test cradles near thrust block		
	Prob test support near thrust block vehicle		
	<input type="text"/> slanted-roofed crate	Inside test position	25X1
	10-m crate on transporter	East of test position	
	10-m crate on transporter	East of test position	
	Prob test support vehicle	Inside test position	
	10-m crate on Prob test cradles	East of test position near thrust block	

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Table 3.
Motors/Motor Containers at Kamensk-Shakhtinskiy
Solid Motor Production Plant

This table in its entirety is classified SECRET/WNINTEL

Date	Description	Location	
	[] motor/motor container	Subassem area	25X1
	[] motor/motor container	Subassem area	25X1
	[] motor/motor container	Subassem area	25X1
	[] motor/motor container	Case prep area	25X1
	[] motor/motor container	Case prep area	25X1
	[] prob motors	Curing area	25X1
	[] canvas- covered motor/motor container	Non-destructive test area	25X1
	[] motor/motor container	Subassem area	25X1

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Table 4.
Activity at Kemerovo Solid Motor Production
Plant-Rocket Motor Test Area

This table in its entirety is classified SECRET/WNINTEL

Date	Description	Remarks
	No test activity	
	Prob components	Railcars at separately fenced components test bldg
	Test activity	
	No test activity	
	Test activity	Prob thrust reversal test indicated by small light-toned bilateral blast mark on blast apron of type C test cell
	No test activity	(Infrequent coverage from [redacted])
	Poss test activity	Railcars on spur to type C test cell moved to different position
	No test activity	
	Test activity	[redacted] boxcar on railspur near assem/checkout bldg
		[redacted] slight discoloration of snow in blast area of type C test cell
		[redacted] test at type C test cell indicated by dark-toned blast and melted snow
	No test activity	
	Maintenance/construction	[redacted] debris cleared from blast apron at type C test cell
		[redacted] stacks of construction materials in receiving area
		evidence of prob controlled burning of vegetation near type C test cell; earth grading for construction in components test area
	Test activity	Prob thrust reversal test indicated by small light-toned bilateral blast mark on blast apron at type C test cell; 2 motors/motor containers on railspur near type C test cell
	Poss test activity	Prob thrust reversal evidence since [redacted] suggests test series [redacted] 3 motors/motor containers removed from railspur near type C test cell

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Solid Motor Assembly and Test Support Facility

31. (S/WN) The expansion program, underway at this facility since 1977, appeared essentially complete during the reporting period, with only one building remaining under construction. All other buildings were externally complete and appeared operational. Missile railcars including canister-/capsule (CAN-/CAP)-type flat cars have been observed on the railspur serving one of the missile storage buildings (Figure 12). Activity at Plesetsk indicated that CAN-/CAP-type ground support equipment will be used with a new small-solid ICBM.³ Possibly, the CAN-/CAP-type railcars at Pavlograd will be used to transport the new medium-solid ICBM.³ A missile assembly building in the northwest corner of the facility was in the midstage of construction.

Ordnance Research-and-Development Facility

32. (S/WN) Construction was continuing during the period on the expansion program which began in 1977 (Figure 13). This program has consisted of work on two large fabrication buildings, one nearly complete and the other in the midstage of construction. The movement of missile railcars indicated that the construction program has not affected the operational capacity of the original facility. No CAN-/CAP trains or SS-18-associated equipment was observed during this period.

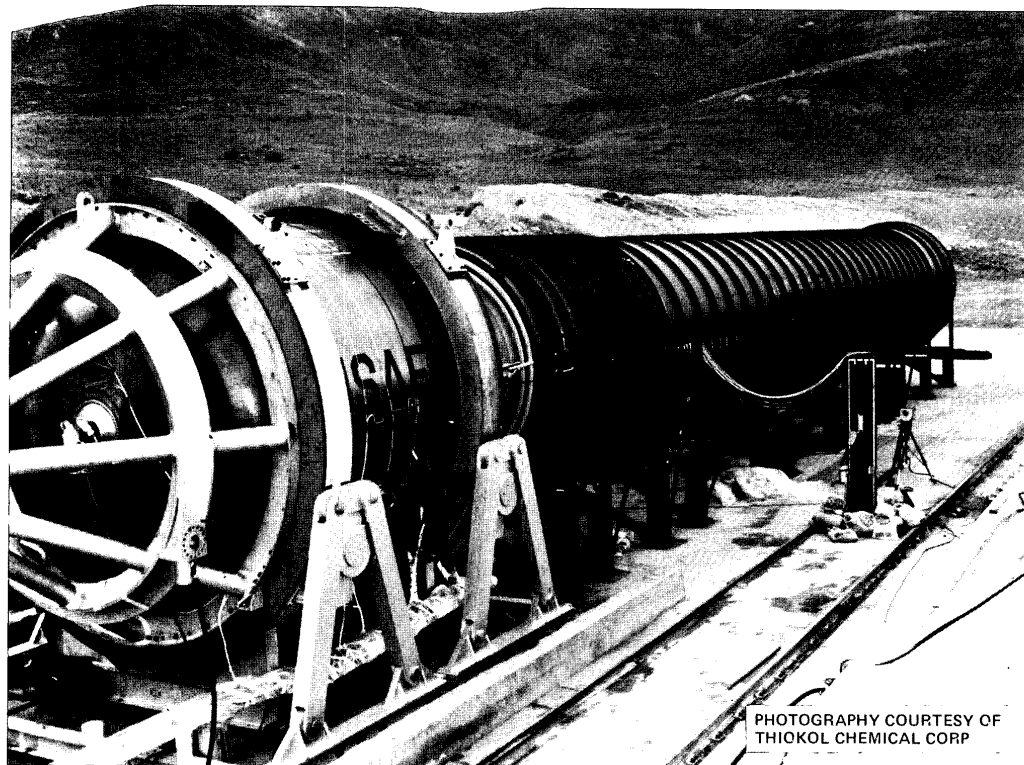
Solid Motor Test Facility

33. (S/WN) Renovations and modifications—in preparation for new test programs—continued at both the horizontal and vertical test areas (Figure 14). A probable test article checkout building was complete near the HTP, and the interior of the position revetment had been resurfaced with precast concrete slabs. Test monitoring equipment was being installed in the berm around the thrust block, and a larger earthen blast deflector had been built. Tracks were installed from the thrust block along the center line of the blast apron to a perpendicular spur which exits the HTP and splits into a double spur. Five

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Table 5.
Activity at Pavlograd Solid Motor Test
Facility-Horizontal Test Position

This table in its entirety is classified SECRET/WNINTEL

Date	Description	Remarks
	Modification	environmental shelter outside test position; large crane at southeast end of blast apron; 2 large cranes near thrust block 25X1
		environmental shelter outside test position; repair of blast walls and apron; conduit from entrance to test position and to test support bldg ucon 25X1
		environmental shelter at thrust block; sections of track and large crane inside test position 25X1
		environmental shelter and large crane inside test position; motors/motor container at entrance to test position; conduit from solid motor test facility (SMTF) to Pavlograd Solid Motor Assembly and Test Support Facility 25X1
	Modification/test equipment receipt	Environmental shelter at thrust block 2 large cranes near environmental shelter prob diffuser segment on new railspur to test position 25X1
	Modification/test equipment receipt	Environmental shelter and large crane inside test position additional prob diffuser segment; large crane nearby 4 prob diffuser segments attached and one separate 25X1 25X1
	Modification facility upgrade	Environmental shelter at thrust block all prob diffuser segments appeared connected one prob diffuser segment disjoined; large crane nearby paving of roads to test position; activity at north upper corner of test position 25X1 25X1 25X1
	Modification	Environmental shelter inside test position; materials/equipment near thrust block
	Modification/test activity	4 prob diffuser segments aligned with thrust block and cable connected to junction boxes in southwest wall of test position; 3 large cranes in test position; environmental shelter outside test position 25X1
		poss motor at thrust block; prob diffuser segments on railspur outside of test position; environmental shelter and small environmental shelter inside test position 25X1
		4 prob diffuser segments joined together and aligned with thrust block; cable connected to junction boxes; snow melt in northwest half of test position apron; environmental shelter near thrust block 25X1
		4 prob diffuser segments disassembled on railspur just inside test position entrance; environmental shelter at southeast end of test position 25X1
		environmental shelter at thrust block poss motor at thrust block; large crane near poss motor; environmental shelter and vehicle at southeast end of test position; environmental shelter inside test position 25X1 25X1
	Modification/test activity	large crane inside test position environmental shelter at thrust block, large crane near environmental shelter 25X1
		prob motor at thrust block (dimensions not available); environmental shelter, large crane, and prob motor crate/dolly inside test position 25X1
		environmental shelter at thrust block; large crane and prob motor crate/dolly near environmental shelter 25X1
		same as except canvas-covered object under environmental shelter 25X1

cylindrical segments, each approximately [] long and [] in diameter, had been mounted on the tracks, which facilitate the arrangement and transportation of the segments to and from the thrust block (Figure 15). The function of these segments has not been determined; however, they may constitute a segmented diffuser system which would provide altitude simulation capability for testing upper-stage motors. The presence of possible hoses inside the test position when the segments are aligned at the thrust block supports the above analysis. The possible hoses could be components of a water-cooled diffuser similar to a US diffuser designed by the Thiokol Chemical Corporation (Figure 15, inset). Activity involving the segments (referred to as probable diffuser segments) and indications of possible static testing observed throughout [] are presented in Table 5. 25X1

34. (S/WN) The former SS-18 launch-assist-device (LAD) test position may be undergoing modifications for the developing and the testing of a LAD for the new medium-solid ICBM.

SECRET**Perm Solid Motor Production Complex**

35. (S/WN) No major new construction was begun at the complex since the previous basic report.¹ The new solid motor production line, under construction since 1978, was completed during this reporting period. Construction of the large fabrication building in the CMDB area of the Perm Solid Motor Production Plant remained in early stages. Although footings for this building had been emplaced by February 1981, work did not begin on the aboveground structure until the spring of 1982.

36. (S/WN) All other areas of the Perm complex remained relatively unchanged. Evidence of rocket motor testing (Figures 16, 17, 18, and 19) was frequently observed at both the revetted isolated test position and at the type A horizontal test cell (Table 6).

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Table 6.
Activity at Perm Solid Motor Production
Plant-Rocket Motor Test Area

This table in its entirety is classified SECRET/WMINTEL

Date	Description	Remarks
	Test activity	[] poss small test at isolated test position indicated by dark-toned area on blast apron near thrust block 25X1
		[] poss small test at type A test cell indicated by snow discoloration 25X1
		[] poss small test at isolated test position indicated by dark-toned streaks near thrust block 25X1
	Test activity	Large motor test at isolated test position indicated by dark-toned blast mark extending beyond blast deflector
	Test activity	Prob small test at type A test cell indicated by snow discoloration
	No test activity	
	Test activity	[] snow melt at isolated test position from thrust block to blast deflector 25X1
	No test activity	[] large crane inside isolated test position 25X1
	Test activity	Prob test at isolated test position indicated by prob light-toned blast mark extending to top of blast deflector
	Test activity	Poss small test at isolated test position indicated by light-toned streaks near thrust block
	No test activity	
	Test activity	Poss test at isolated test position indicated by poss dark-toned blast mark extending to top of blast deflector
	Test activity	[] test at isolated test position indicated by dark-toned blast mark extending to top of blast deflector 25X1
		Small test at type A test cell indicated by dark-toned blast mark
		[] large motor test at isolated test position indicated by dark-toned blast mark/snow melt extending beyond blast deflector 25X1
	No test activity	
	Test activity	Prob thrust reversal test at isolated test position indicated by small light-toned bilateral blast mark on blast apron
	No test activity	
	Test activity	[] prob thrust reversal test at isolated test position indicated by small light-toned bilateral blast mark on blast apron 25X1
		[] large crane and environmental shelter inside isolated test position 25X1
		[] large crane and prob vehicle inside isolated test position 25X1
		prob small test at isolated test position indicated by light-toned streaks near thrust block

REFERENCES**IMAGERY**

(S/WM) All applicable satellite imagery acquired through [] was used in the preparation of this report. 25X1

DOCUMENTS

- NPIC. [] RCA-09/0010/81. *Developments at Soviet Solid Propellant Production Facilities (S)*, Jul 81 (TOP SECRET) [] 25X1
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- NPIC. [] RCA-09/0011/80. *Activity and Developments at Soviet Solid Propellant Production Facilities (S)*, Aug 80 (TOP SECRET) [] 25X1
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- NPIC. [] RCA-01/0011/82. *SAL-Related Activities Summary Report 1 March - 31 May 1982 (S)*, Jun 82 (TOP SECRET) [] 25X1
25X1

*Extracted information is classified SECRET [] 25X1

REQUIREMENT

COMIREX JO2
 Project 542040j

(S) Comments and queries regarding this report are welcome. They may be directed to the Missile Production Section, Soviet Strategic Forces Division, Imagery Exploitation Group, NPIC, [] 25X1

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